

What is claimed is:

1. A method of delivering security services, comprising:

connecting a plurality of processors in a ring configuration within a first  
5 processing system;

establishing a secure connection between the processors in the ring  
configuration across an internet protocol (IP) connection to a second processing  
system to form a tunnel; and

10 providing both router services and host services for a customer using the  
plurality of processors in the ring configuration and using the second processing  
system.

15 2. The method of claim 1, wherein, to support a communications network, the  
plurality of processors includes one or more control processors, one or more access  
processors, and one or more processing processors.

20 3. The method of claim 2, wherein for each of a plurality of customers, a virtual  
router is formed in the first processing system and is operably connected to a virtual  
router formed in the second system.

4. The method of claim 2, wherein for each of a plurality of customers, a virtual  
private network is formed using a virtual router formed in the first processing system  
and operably connected to a virtual router formed in the second system.

25 5. The method of claim 2, wherein the connecting a plurality of processors in  
the ring configuration includes forming dual counter rotating ring connections, each  
connecting to each of the plurality of processors.

6. A system of delivering security services, comprising:

a plurality of processors in a ring configuration within a first processing system;

means for establishing a secure connection between the processors in the ring configuration across an internet protocol (IP) connection to a second processing system to form a tunnel, and for providing both router services and host services for a customer using the plurality of processors in the ring configuration and using the second processing system.

7. The system of claim 6, wherein, to support a communications network, the plurality of processors includes one or more control processors, one or more access processors, and one or more processing processors.

8. The system of claim 7, wherein for each of a plurality of customers, a virtual router is formed in the first processing system and is operably connected to a virtual router formed in the second system.

9. The system of claim 7, wherein for each of a plurality of customers, a virtual private network is formed using a virtual router formed in the first processing system and operably connected to a virtual router formed in the second system.

10. The system of claim 7, wherein the plurality of processors in the ring configuration includes dual counter rotating ring connections, each connecting to each of the plurality of processors.

11. A system of delivering security services, comprising:
  - a plurality of processors within a first processing system connected in a ring configuration; and
  - a tunnel formed using a secure connection between the processors in the ring configuration across an internet protocol (IP) connection to a second processing

system, wherein both router services and host services are provided for a customer using the plurality of processors in the ring configuration and using the second processing system.

5        12.     The system of claim 11, wherein, to support a communications network, the plurality of processors includes one or more control processors, one or more access processors, and one or more processing processors.

10       13.     The system of claim 11, wherein for each of a plurality of customers, a virtual router is formed in the first processing system and is operably connected to a virtual router formed in the second system.

15       14.     The system of claim 11, wherein for each of a plurality of customers, a virtual private network is formed using a virtual router formed in the first processing system and operably connected to a virtual router formed in the second system.

20       15.     The system of claim 11, wherein the plurality of processors in the ring configuration includes dual counter rotating ring connections, each connecting to each of the plurality of processors.

      16.     The system of claim 11, further comprising:  
         a services management system that provides changeable provisioning of processor capacity among a plurality of customers.

25       17.     The system of claim 11, further comprising:  
         a services management system that provides firewall protection for each of a plurality of customers.

      18.     The system of claim 11, further comprising:

